

# ENERGY SERVICES Bulletin

The energy and planning resource for WAPA utilities

August 2017

WESTERN AREA POWER ADMINISTRATION



## APPA honors WAPA customers for service, innovation

"Your Nose Knows! Natural Gas Safety," an outreach program by Colorado Springs Utilities, teaches children about natural gas safety. Shown: Safety education presenters Ray Anderson (in blue) and Tom Hutchison (in white) and the students of Colorado Springs School District 20 Woodmen-Roberts Elementary. (Photo by Colorado Springs Utilities)

Congratulations to the four WAPA customers who were among 18 individuals and 10 utilities to receive awards at the American Public Power Association's National Conference in Orlando, Fla., on June 20. Lincoln Electric System (LES), Colorado Springs Utilities, Fort Collins Utilities and SMUD earned recognition for their service to the public power industry and its member-customers

### Continuing to excel

LES, a Nebraska municipal utility, earned the E.F. Scattergood System Achievement Award for outstanding accomplishments that enhance public power's national prestige, improve customer service and demonstrate an earnest, coordinated effort on the part of the system.

In 2016, LES unveiled the state's largest and first utility-scale solar array, Lincoln's 5-megawatt (MW) community solar facility. Customers can invest in virtual solar panels, receiving credits on their bill. Improvements were also implemented to the utility's rate structure to encourage energy effi-

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**SMUD tested the Climate Wizard cooling system on two commercial customers to find out if the technology could be an effective peak-shaving measure. (Photo by Climate Wizard)**

ciency and protect customers sensitive to bill fluctuation.

In the community, LES's Energy Detective Kits teach students and their parents about saving energy, reducing water usage and lowering their household bills.

With a 99.99-percent reliability record, the utility continues to take strides to make sure its power remains dependable. Its mobile meter-reading project upgraded nearly all of the system's 137,000 analog meters.

### **Supporting community**

An established and evolving community safety program won the Community Service Award for Colorado Springs Utilities of Colorado. This award recognizes "good neighbor" activities that demonstrate commitment to the local community.

The community safety program, which has been a cornerstone of the municipal utility's community involvement for 20 years, provides educational outreach in schools and at community events to audiences of all ages. Each year, almost 15,000 students, adults, contractors and first responders learn about gas and electric safety and about the safe and efficient use of utility services.

Recently, Colorado Springs Utilities

revised and retargeted the education program to meet specific curriculum needs in schools and incorporate more messaging that is interactive and inquiry-based. "SafetyCircuit: Electric Safety and You" uses a live electric demonstrations board to show students the safe use of electricity indoors and outdoors, and how electricity affects our daily lives. An interactive live explosion demonstration is part of "Your Nose Knows! Natural Gas Safety & You," a program teaching students about the properties and origins of natural gas and safety practices to prevent natural gas emergencies.

### **Increasing residential program participation**

Fort Collins Utilities in Colorado and SMUD in California were among the four utilities to receive the Energy Innovator Award for utility programs or projects that demonstrate creative energy-efficiency measures or technologies. Eligible demonstrations can either improve customer service or increase the efficiency of utility operations. Judging criteria also includes transferability and takes into account project scope in relation to utility size.

Fort Collins Utilities was honored for its successful Efficiency Works-Neighborhood pilot program, which

tested a streamlined process for home efficiency upgrades. The streamlined process made efficiency upgrades easy for customers by offering a choice of three packages—good, better and best—each custom-made for their homes. The packages provided upfront rebates, used standardized pricing, eliminated the need to get multiple contractor bids and ensured the quality of all completed work.

Over an 18-month period, the pilot program tripled the number of customers proceeding with energy-efficiency improvements and renewable systems installation. The upgrades lead to 50 percent greater electrical use reduction, 70 percent greater natural gas use reduction and 60 percent greater greenhouse gas savings per home.

### **Piloting cooling efficiency**

SMUD received the Energy Innovator Award for its work with the hyper-efficient Climate Wizard air conditioner. Manufactured in Australia, the Climate Wizard has the potential to use up to 90 percent less energy to cool the same space as an equivalent refrigerated system.

Replacing conventional air conditioners with these indirect evaporative

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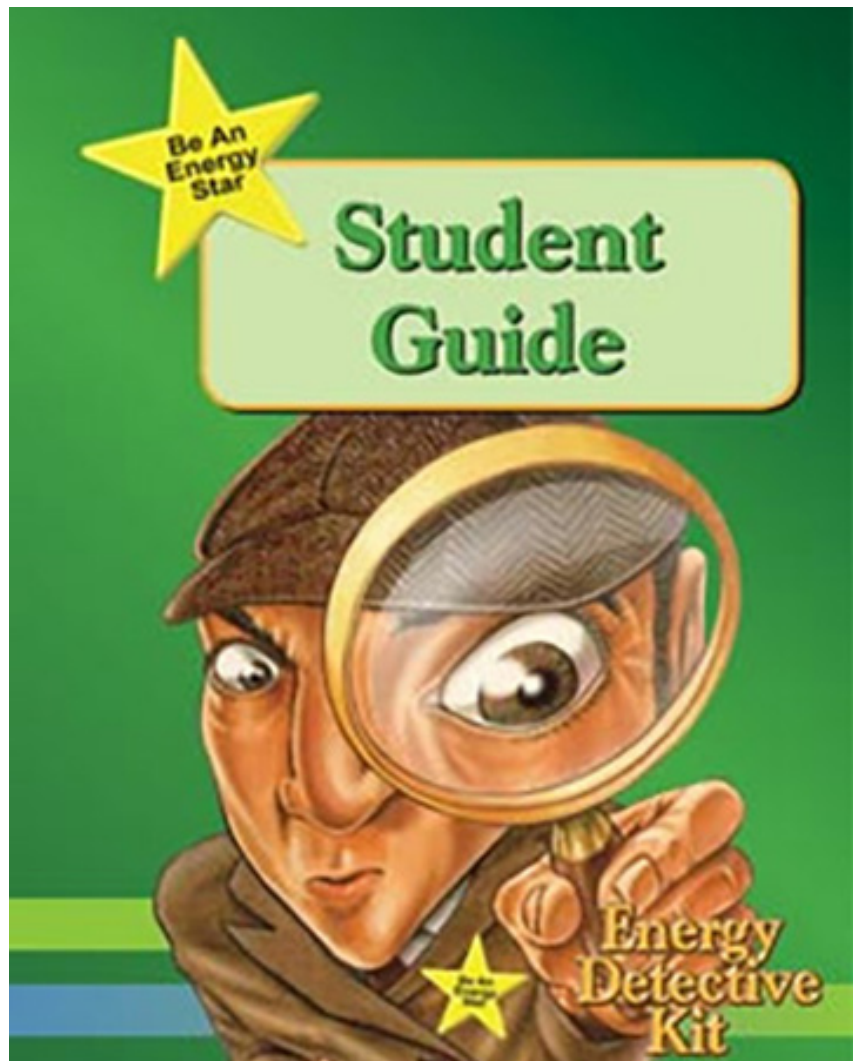
The Fort Collins Efficiency Works-Neighborhood pilot program attempts to overcome barriers for customer project implementation, such as time and lack of money. The pilot is the next step for the Efficiency Works-Home program. (Artwork by Fort Collins Utilities)

heat-exchange core systems could have a huge impact on SMUD's peak cooling load during scorching Sacramento summer days. To evaluate the Climate Wizard's performance, SMUD installed units with two industrial customers, a data center and a tool manufacturer.

The Tri-Tools production floor is not only hot from milling, turning and cutting metals, it is also humid from using water to cool materials during cutting. Because the Climate Wizard does not add moisture to the cooled air; it keeps employees more comfortable and improves the production process while saving the business energy and money.

The challenge for the data center Datacate is to maintain a consistently low temperature to keep servers and other equipment running 24/7. This pilot project, which will continue through 2017, has allowed the data center to operate more efficiently, add more capacity and lower operating costs.

The hallmarks of public power are dedication to community, commitment to innovation and constant striving to improve service. At WAPA, we already know our customers are leaders in the industry and we are excited to see that the industry recognizes them, too. ■



LES distributes the Energy Detective Kit at schools to help students and their parents save money and electricity. (Artwork by Nebraska Energy Office)

# Community solar workshop presentations now available

If you missed Community Solar Procurements, Programs and Pricing, a workshop WAPA cosponsored with the Community Solar Value Project Y(CSVP) and SunShot Solar Market Pathways, you can now download the presentations from the CSVP website.

The free event was held at WAPA's Electric Power Training Center in Golden, Colorado, and drew strong attendance from every type of utility, especially in the West. As the workshop title stated, the agenda focused on the logistical aspects of building a community solar project and explored ways to make projects more successful. Speakers and participants discussed best practices for analyzing solar development opportunities, writing requests for proposals, engaging internal and external stakeholders, working with contractors and vendors and designing rates.

## Customers share experience

Several WAPA customers were on hand to share their experiences with developing their own projects. Luis Reyes of Kit Carson Electric Cooperative sat on a panel that focused on improving the procurement process. The Taos, New Mexico, utility launched its first community solar project in 2012 and has an ambitious initiative to install 35 megawatts of photovoltaics this year.

A panel on pricing challenges included John Phelan from Fort Collins Utilities. You are leaving WAPA.gov in northern Colorado. As a pioneer with Rocky Mountain Institute in clean energy and sustainability solutions, the city of Fort Collins has discovered that success brings a new set of challenges. For example, the utility is wrestling with how to design a rate that accommodates both a legacy community solar garden and a new array for quali-

fied low-income customers.

Poudre Valley Rural Electric Cooperative is currently developing a 6,000-panel community solar project with carve-outs for local nonprofit organizations and another for income-qualified customers. Making community solar available to customers who need the most help with utility bills was another topic that received a lot of attention. Utilities are experimenting with different business models for low-income projects, but most agree on the potential benefits: freeing up more money for other needs, bringing more certainty to monthly

bills and raising energy awareness in a hard-to-reach group.

## Ask for more

WAPA thanks the Community Solar Value Project for partnering with us to put on Community Solar Procurements, Programs and Pricing. Utilities are still learning about this form of distributed energy and how to gain the most benefits from it for their customers and their own operations. To learn more, check out the workshop presentations, along with past CSVP webinars. Also, let us know if there are other types of workshops you would like to see WAPA present, or partners or subject matter experts we could collaborate with. ■



Participants throw ideas against the wall to see what sticks during table-top sessions on program design, procurement, rate design and marketing.



WAPA Energy Services Manager Ron Horstman (standing right) talks about the opportunities and challenges community solar represents for utilities.



# White paper compiles data on utility programs for low-income customers

**L**ow-income households spend on average three times more of their income on energy bills than other households, and easing the pain of higher bills during peak-load times of year is a continuous challenge for utilities.

This group of customers can be hard to reach, leading to a hit-or-miss track record for low-income energy-efficiency programs. But the benefits of successful programs stretch beyond energy and bill savings to include fewer shut-offs, healthier homes, less outdoor pollution and more local jobs. It is well worth the effort to design an effective program, and a new report from the American Council for an Energy Efficient Economy (ACEEE) can take some of the mystery out of doing it.

The baseline assessment of more than 70 utilities' electric and natural gas programs chronicles total investments in these programs, energy savings impacts, customer participation and

use of best practices. The study looked at the largest electric and natural gas utility serving each of the 51 largest metropolitan statistical areas.

ACEEE researchers found that low-income programs varied in terms of how deeply they address whole-home energy-efficiency needs and how accessible they were to customers. While many utilities design and administer impressive, effective low-income programs, many of those programs could be improved with best practice elements or increased resources.

The report also looks at best practices in implementation, including whether programs target specific households based on energy burden

or other vulnerabilities and streamline enrollment for easier access. Partnering with the federal Weatherization Assistance Program (WAP) to leverage funds and reach more customers is another factor that impacts the effectiveness of a low-income program.

The study includes maps, data tables and new state-level information on low-income program requirements, cost-effectiveness rules and coordination with the WAP program. Utilities can use the data to see how their programs compare to those of similar utilities and to identify opportunities for adding best practice elements.

Read the entire ACEEE blog post for more information, and share your free copy of the report with state and local policymakers as well as other stakeholders. Also, if your utility has a program to help low-income customers, Energy Services Bulletin would like to know about your experiences. ■



# APPA webinar series explores new electricity future

Aug. 15 – Oct. 26

**T**he future is here and resistance is futile. Public power utilities of all sizes are facing a new world shaped by technology, customer preferences and changing policies. These changes are most evident in five key areas:

- Rate design
- Community solar
- Electric vehicles
- Battery storage
- Smart meters

The American Public Power Association wants to help power providers navigate these changes and explore the opportunities this new environment presents. Beginning Aug. 15, a five-part webinar series looks at new initiatives through the experiences of the utilities that implemented them.

The series features experts on utility industry trends and is intended to encourage new thinking on the relationships between consumers, utilities and other energy service providers. Several WAPA customers are among the speakers, including Imperial Irrigation District, Los Angeles Department of Water and Power and SMUD in California, Moorhead Public Service in Minnesota and SRP in Arizona.

APPA recommends this series for general managers, CEOs, senior utility

executives, governing boards, policy-makers, utility managers, future leaders in policy and strategy and public communications professionals.

## Comprehensive agendas

You can sign up for webinars individually or register for the full series at a discounted rate. Participants will also get access to recordings and slides of the webinars for future reference or if they miss one. All webinars are scheduled for 12-1:30 p.m. Mountain Time.

### Aug. 15 – The Future of Rate Design:

Distributed generation and energy-efficiency programs are creating cost-shifting concerns. Catch up on the latest industry rate trends and discover how to move toward stable

rate structures that accurately recover costs from all customers. Review the pros and cons of different rate models—time of use, higher customer charge, demand charges and bi-directional billing. Learn how other utilities like yours have created long-term rate plans, selected and implemented new rate designs, and obtained buy-in from board and city council members as well as customers.

### Sept. 7 – Community Solar

**Success Stories:** Community solar is becoming an increasingly popular option for utilities that want to increase solar in their generation portfolios and offer this option to



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# Public Power Ready



#PublicPower

(Art work by American Public Power Association)

customers who cannot install rooftop solar. An industry expert will share experiences, insights and predictions for the future of community solar. Your utility colleagues who've launched community solar programs across the country will explain how they made decisions in key areas like program structure, implementation, financing, customer outreach, rates and marketing. They'll discuss challenges and the secrets to success so you don't have to reinvent the wheel.

**Sept. 26 – Charging Ahead with Electric Vehicles:** The price of electric cars is falling, and more fast-charging stations are being installed. The Brattle Group predicts that a steady conversion of vehicles and heating to electricity could possibly lead to a 105-percent increase in electricity demand by 2050. If these new loads start to proliferate in your community, are you ready to support them? Now is the time to plan for EV infrastructure and to make important cost-benefit decisions. Learn about new develop-

ments and advances in EVs and how they are impacting the utility industry. Hear about innovative public power EV programs and get insights regarding how to work with customers to spur investment in EVs, develop fair pricing models and plan for potential load growth.

**Oct. 12 – Best Practices in Battery Storage:** The evolution of energy storage is changing how we produce and consume energy like never before. Technological advances, reduced costs and mandates from regulators have positioned energy storage for unprecedented growth. Get up to speed on where we are and what to expect in the future. Three public power utilities will talk about their award-winning storage projects and the realities of implementation, from selecting a developer and siting to leveraging benefits such as peak shaving and financial impacts. Your pioneering colleagues will help you navigate the bold new path of utility-scale battery storage.

**Oct. 26 – Smart Meters for Smart Solutions:** Learn from utilities that have installed advanced metering infrastructure (AMI). Gear up for the real-world challenges and understand how other utilities like yours are using AMI and integrating with other technologies. Understand how to fully leverage the benefits of smart meters — to predict load and usage, implement time-of-use rates, respond better to outages, assess the need for system upgrades and offset peak demand charges. Gather best practices on transitioning rate structures, educating customers and soliciting feedback.

## Registration information

You can sign up for the entire series or register for each webinar individually. Individual webinars cost \$99 for APPA members and \$199 for nonmembers. Register for all five webinars for \$395 for APPA members or \$795 for nonmembers, a discount equivalent to one webinar. ■

# New LBNL study helps utilities compare natural gas, renewables

**L**ow wholesale power prices and an uncertain future for federal power regulations have made it trickier—and riskier—than ever for utilities and independent power producers to plan for and invest in generation.

*Using Probability of Exceedance to Compare the Resource Risk of Renewable and Gas-Fired Generation* seeks to simplify decision-making with clear, cold numbers. The new Lawrence Berkeley National Laboratory (LBNL) study offers a new way to compare the resources, showing that renewables are an economic and reliable choice.

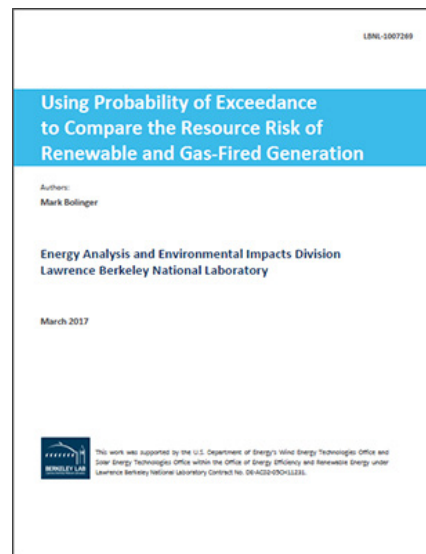
Resource risk can be very difficult to mitigate for long-term investments in power plants, and it manifests differently for renewable and natural gas-fired generation. For renewables, the risk is “the quantity of wind and insolation will be less than expected.” For natural gas, the risk is “natural gas will cost more than expected.”

Statisticians label the mid-range case “P50,” but calculate a probability for all possibilities from P1 to P99. Probability of exceedance is commonly used by utility planners “to characterize the uncertainty around annual energy production for wind and solar projects,” the paper reports. It “can also be applied to natural gas price projections.”

The study’s “statistical concept” quantifies the risk at each P-level of expected renewables output levels and natural gas prices and factors them into a leveled cost of energy comparison. “In general, higher-than-expected gas prices appear to be riskier to ratepayers than lower-than-expected wind or solar output,” noted LBNL researcher and study co-author Mark Bolinger.

Utilities contracted for or owned 55 percent of 2016’s installed wind capacity and are expected to contract for two-thirds of the 13.2 gigawatts of solar expected to be added this year. Yet, utility planners may be underestimating the hedge value of these renewable resources. A survey of more than 600 sector professionals by Utility Dive showed only 7 percent see natural gas price volatility as the main reason to invest in renewables.

Views on the LBNL paper differ across the energy industry with Charlie Reidl, executive director of the Center for Liquefied Natural Gas insisting that global demand would not put sig-



nificant price pressures on proven U.S. reserves. Other authorities, however, argue U.S. reserves are being depleted too rapidly to keep up with growing demand.

The disagreement underscores the importance of a method like LBNL’s that quantifies the risk and uncertainty. Renewable industry representatives have called the LBNL paper an important contribution that could be useful for utility integrated resource planning.

Read more about the study and industry reactions in Utility Dive and download the report and webinar presentations from the LBNL website.

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